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Iowa State Highway Commission

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A PRE-WISCONSIN VALLEY IN SOUTHWESTERN HANCOCK COUNTY

L. W. Wood

An extensive road surfacing program in all the counties of northern Iowa for the past ten years or more has resulted in a severe drain on the gravel supplies of that territory, and has, in many cases, necessitated the search for new deposits. Such is the case in Hancock County. The kame and esker deposits, which were the first to be opened and worked, are now almost entirely exhausted, and gravels of the valley trains, though not so easily found, and though, in many cases, lying below the ground water level, hold the most promise for future needs. The valley described in this paper is one which was traced out in the course of a search for new deposits of this type in the vicinity of Britt and Kanawha.

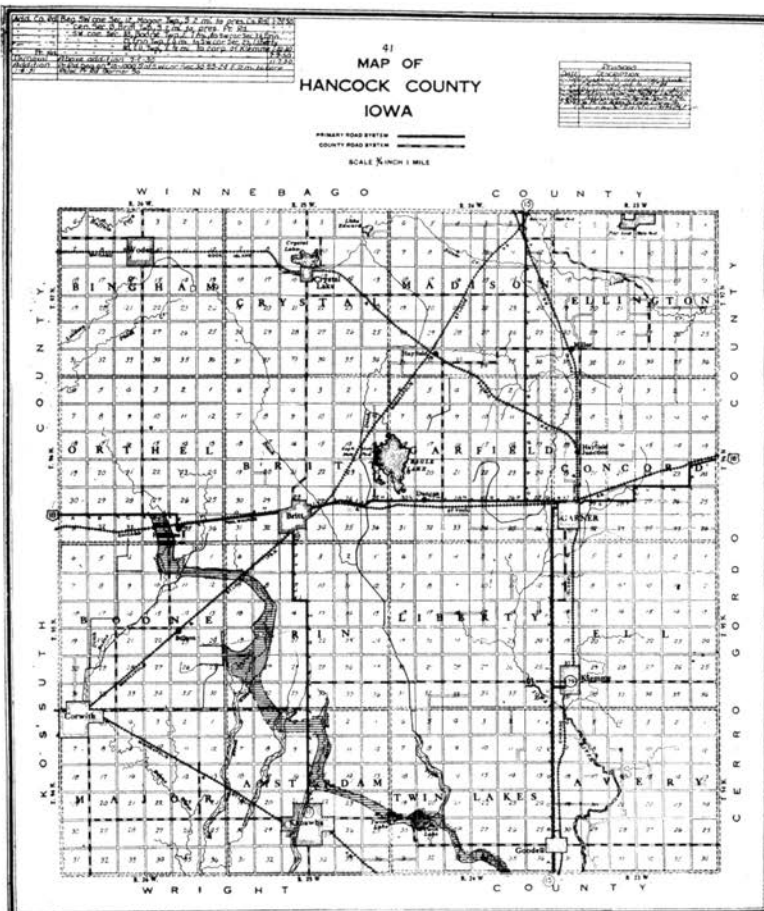
The West Branch of the Iowa River occupies a well-defined valley of various widths from Britt southeasterly to its junction with the valley of East Branch south of Goodell. Careful examination of this valley shows little indication of valley gravels north of the central part of section 21, Twin Lake Township, though it runs through several morainic areas, especially in the north part of that township. From section 21 southeast, the valley is choked by deposits of gravel. A logical inference is that the source of this gravel is some present or former tributary in the vicinity of section 21 or section 28.

Twin Lakes are evidently pools formed by the partial damming of a large valley of early Wisconsin or Pre-Wisconsin age which joins the West Branch of the Iowa River in NE $\frac{1}{4}$, section 29, Twin Lake Township. Since gravel is not found in the valley of West Branch above this point, it is reasonable to assume that the source of the deposits farther southeast may be this older valley from the west.

To the west of West Twin Lake, in section 24, Amsterdam Township, the country is high, with no topographic indication of any old valley. Farther to the west, however, through the north half of section 23 and the south half of section 15, a short west-flowing stream of insignificant size occupies a deep well-defined valley from 1000 feet to half a mile wide. This is evidently the westward continuation of the old valley now occupied by Twin Lakes.

A branch of Boone River which runs southward through the central part of Amsterdam Township has a valley about one-half mile wide from toe of slope to toe of slope in sections 10 and 15, and the south part of section 3, while farther upstream or downstream it is scarcely 500 feet wide. A broad, ill-defined swale extends westward in NW $\frac{1}{4}$ SW $\frac{1}{4}$, section 3. This swale, and the broader valley in sections 10 and 15, are believed to be portions of the older valley, here perhaps filled very little.

An embayment in the valley of the next branch of Boone River to the west, through the east half of section 5, Amsterdam Township, as contrasted with its very narrow lowlands for some distance above and below, indicates that this is a partially re-excavated portion of an older valley.



A larger branch of Boone River runs through the western part of Erin Township and near the west line of Amsterdam Township and the east line of Magor Township. From a point west of Kanawha, northward as far as the north part of section 31, Erin Township, its valley is very narrow. Farther northward, to NW $\frac{1}{4}$ section 8, Erin Township, the valley, though shallow, is one-half mile to one mile wide. Broad shallow depressions, unoccupied by streams, extend westward through the north part of section 30 toward Stilson, and through the north part of section 7, toward Hutchins. This wide portion, and the shallow depressions leading westward, are believed to mark the courses of earlier drainage. The depression in section 7 extends on westward through the north part of sections 12 and 11 and the SW $\frac{1}{4}$ of section 2, all of Boone Township, merging into the wide shallow valley of the main branch of Boone River.

It appears from a study of the map of this territory, that all these embayments and wide portions in the present valleys mark the course of an old major valley trending southeastward from Hutchins to join the West Branch of Iowa River near Twin Lakes. The age of this valley is somewhat difficult of determination, as all exposures in it are of Wisconsin till or Wisconsin sands and gravels. It is probable that it dates back at least as far as pre-Wisconsin time and that it carried the drainage from a section of the advancing Wisconsin glacier. With further advance, the ice sheet overrode the valley, filling it partially in some places and completely in others.

It is not believed that this is the only valley of importance of the pre-Wisconsin drainage system in Hancock County. A systematic and careful study of topography, and of records of wells and other drillings, may reveal others, perhaps of equal or greater magnitude. Pending such a complete study, no name is proposed for this one.

As was stated at the beginning of the paper, this valley was discovered and traced out in the course of a search for gravel supplies. It is of interest to note that in tracing out its course, a rather extensive gravel deposit was located in the north part of section 17, Erin Township, and that this deposit has since been purchased by the State Highway Commission, and opened up for road work.

STATE HIGHWAY COMMISSION,
AMES, IOWA.